

REMARKS

Claims 1, 2, and 6-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over US 5,589,280 A in view of US 5,137,791 A or US 2003/0085474 A1 for the reasons of record. The rejection of these claims is respectfully traversed because the proposed combinations of references do not produce Applicants' claimed invention.

Regarding claim 1, Examiner acknowledges that 5,589,280 A does not teach Applicants' silicone rubber substrate, but concludes that US 5,137,791 A and US 2003/0085474 A1 both teach that metalized silicone rubber substrates have application in electronic circuit applications. Applicants' respectfully disagree with this conclusion. The '791 patent teaches a flexible metal film laminate comprising a film formed from a wide variety of thermosetting polymers, including silicone resins (see col. 6, lines 48-68). The '474 patent teaches a method of attaching semiconductor device on a switching device, where the semiconductor device has flexible contact elements that are basic bodies of silicone with a metallized crest (see [0066] and [0071]). The terms "silicone resin" and "silicone" are not synonymous with the term "silicone rubber." Silicone rubber constitutes a specific class of cured silicone polymers having distinctive properties (see [0010] of present application), and neither the '280 patent nor the '791 patent teach Applicant's claimed silicone rubber substrate having a coefficient of linear thermal expansion of at least $2 \times 10^{-4} ^\circ\text{C}^{-1}$.

Regarding claims 15 and 16, Examiner acknowledges that the references do not expressly teach Applicants' layer of ductile metal having a thickness of from 20-500 nm (claim 15) or from 50-500 nm (claim 16), but concludes that the thickness of the metal layer is a result-effective variable affecting the durability of the film, the weight of the overall multi-layer structure, as well as production cost and, as such, it would have been obvious to one skilled in the art to optimize this value by routine experimentation, absent evidence of criticality. Applicants respectfully disagree with this conclusion. According to the MPEP (Section 2144.05, II A), "*where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation*" (emphasis added). The '280 reference

teaches the functional metal layer “can range from about 100 Å in thickness up to about 10,000 Å in thickness, with preferred thick metal layers being between about 500 Å and 3000 Å, and most especially from about 1000 Å to about 3000 Å in thickness (page 5, lines 53-57). This means the minimum thickness of about 100 Å (1000 nm) taught in the ‘280 patent is about 100% greater than Applicants’ maximum thickness of 500 nm recited in the claims. Given the magnitude of this difference, Applicants believe the prior art does not disclose the *general conditions* of present claims 15 and 16 and, therefore, their claimed range of thickness is not the result of routine experimentation within the art.

For the reasons stated above Applicants respectfully submit claims 1, 2, and 6-16 recite an invention that is both novel and nonobvious in view of the cited references. You are authorized to charge deposit account 04-1520 for any fees necessary to maintain the pendency of this application. You are authorized to make any additional copies of this sheet needed to accomplish the purposes provided for herein and to charge any fee for such copies to deposit account 04-1520.

Respectfully Submitted,

/Larry A. Milco/
Larry A. Milco, Ph.D.
Reg. No. 41,196
Tel: 989-496-3161